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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,298	12/21/2001	Toivo T. Kodas	41890-01616	6363

25231 7590 09/16/2002

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EXAMINER

AHMED, SHEEBA

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 09/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

10/032,298

Applicant(s)

KODAS ET AL.

Examiner

Sheeba Ahmed

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-- The MAILING DATE of this communication appears on the cover sheet with the corresp ndence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The preliminary amendment submitted on December 21, 2001 (Paper No. 4) has been entered in the above-identified application. Claims 28-71 have been cancelled.

Claims 1-27 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-12, 14, 15, 18-21, and 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Shorthouse (US 5,173,457).

Shorthouse discloses a paste composition comprising a dielectric component of substantially spherical particles having a particle size below 5 microns (Column 2, lines 2-5). The dielectric component is preferably a powder (***corresponding to the glass powder batch of the claimed invention***) having a particle size range of 0.1 to 3 microns (***thus meeting the particle size limitations of claims 1, 8, 9, 18, 24 and 25***) and having a spherical shape (***thus meeting the limitation that the particles are substantially spherical as recited in claims 1 and 19***). The size is tightly controlled with essentially no particles outside the range, i.e., the powder is monodisperse (***thus meeting the particle size distribution limitations of claims 1-3 and 18***) (Column 3,

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lines 7-15). The dielectric material is preferably a glass containing oxides of silicone, boron, and aluminum (***corresponding to the complex glass particles of the claimed invention***). Preferred glasses include borosilicates, aluminosilicates (***thus meeting the limitations of claims 11, 12, 21 and 23***) and aluminoborosilicates (Column 3, lines 24-40) The particles may be heated to form porosity in the particles and subsequent heating further causes the particles to coalesce to decrease the porosity and form a glass material (***indicating that the particle density is close to the theoretical density of the glass and thus meeting the limitations of claims 6, 7, and 20***) (Column 3, lines 55-62). Example 1 indicates that the dielectric component is a borosilicate having 20% boron and 80% silicon as oxides (***thus meeting the limitation that the glass particles comprise at least about 95 weight % of glass as recited in claims 4 and 5 and that the particles comprise no greater than 0.1 atomic percent of impurities as recited in claims 14, 15, and 27***) and having a particle size in the range of 0.1 to 5 microns. All limitations of claims 1-12, 14, 15, 18-21, and 23-27 are disclosed in the above reference.

3. Claims 1-5, 8-15, 17-19, and 21-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Yuasa et al. (US 4,567,030).

Yuasa et al. disclose a substantially non-agglomerating inorganic compound having a particle size of 0.1 to 1.0 microns and a very narrow particle size distribution (***corresponding to the complex glass particles of the claimed invention and meeting the particle size limitations of claims 1, 8, 9, 18, 24, and 25 and the***

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limitations of claims 10 and 26) (Column 1, lines 56-60). The inorganic compound comprises a solid solution of silica and a metal oxide such as aluminum oxide, boron oxide, and lead oxide **(thus meeting the limitations of claims 11-13 and 21-23)** (Column 2, lines 50-60). The particle size of the inorganic compound is between 0.1 and 1 microns and the particle size distribution is very narrow and can be controlled to below 1.3 **(thus meeting the particle size distribution limitations of claims 1-3 and 18)** (Column 3, lines 32-36). The inorganic compound is substantially amorphous or is a mixture of an amorphous portion and a crystalline portion **(thus meeting the limitations of claim 17)** (Column 3, lines 62-68). All limitations of claims 1-5, 8-15, 17-19, and 21-27 are disclosed in the above reference.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 1 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Arai et al. (US 5,849,055).

Arai et al. disclose inorganic microballoons (hollow spheres) (Column 2, line 36) of borosilicate glass (Column 3, lines 1-12) **(thus meeting the limitations that the**

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glass particles are spherical). The average particle size is preferably at most 1 micron **(thus meeting the particle size limitations of claim 1)** (Column 3, lines 53-55). All limitations of claims 1 and 16 are disclosed by Arai et al.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (703)305-0594. The examiner can normally be reached on Mon-Fri 8am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703)308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-5408 for regular communications and (703)305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5665.



Sheeba Ahmed
September 11, 2002



Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700